

MAMMALS AND REPTILES COLLECTED BY THEODOOR DE BOOY IN THE VIRGIN ISLANDS.

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INTRODUCTION.

During the winter of 1916-17 Mr. Theodoor de Booy excavated two Indian sites in the Virgin Islands—one at Magen's Bay, St. Thomas, the other at Salt River, St. Croix. This work was done for the Museum of the American Indian, Heye Foundation, New York City. The remains of mammals and reptiles found in the deposits were submitted to me for identification, and a representative series of the bones has been given to the United States National Museum by Mr. George G. Heye. A wild-killed agouti from St. Thomas was presented by Mr. de Booy.

As regards the localities, Mr. de Booy writes as follows under date of March 15, 1917:

The bones from St. Thomas were found in a kitchen midden at Magen's Bay on the north coast of the island. This bay abounds in shell food and in fish of all kinds. It must have offered an ideal dwelling place for the pre-Columbian inhabitants of St. Thomas. The midden was fairly large in extent and from 4 to 7 feet deep. From this depth must be deducted the covering of diluvium, which was from 1 to 2 feet thick according to the slope. The animal bones were found below the diluvial deposit in a semi-indurated mass of clay-like soil plentifully mixed with shells, charcoal, sherds, and other artifacts. As I dug up the entire midden, the bones that were found can fairly be regarded as representing the entire range of animals represented in the deposit. The St. Croix site was near the mouth of Salt River on the western bank. Conditions did not differ materially from those found in St. Thomas. Evidence was discovered in the deposits that the inhabitants of St. Thomas led an adventurous and roving existence. Several artifacts were procured of Porto Rican and Santo Domingan origin, unmistakably so, as they differed totally from the normal culture found in the midden. Further proof of this roving disposition was found when I excavated in the same midden four shells of *Helix* [*Pleurodonte*] *bornii*, which is not found in St. Thomas but has its nearest habitat in Porto Rico. The lips of these shells were perforated as if to facilitate carrying them.

MAMMALS.

ISOLOBODON PORTORICENSIS Allen.

St. Thomas: 92 specimens (representing probably about 30 individuals): palates 3; frontals 2 pairs and 1 odd; parietals 2 pairs;

occipital 1; auditory bulla 1; mandibles (right) 10, (left) 5; scapula 1; humerus (right) 2, (left) 3; innominate (right) 2, (left) 4; femur (right) 22, (left) 13; tibia (right) 9, (left) 11.

St. Croix: 56 specimens (representing probably about 15 individuals): mandibles (right) 6, (left) 4; scapula 1; humerus (right) 3, left 2; radius (right) 5; ulna (left) 1; innominate (right) 3, (left) 1; femur (right) 7; (left) 9; tibia (right) 4, (left) 10.

The numerous remains of *Isolobodon* from St. Thomas and St. Croix show no characters that suggest the existence of any tendency toward local differentiation. The same fact is equally true when they are compared with material from Porto Rico and Santo Domingo.¹ It seems highly improbable that any mammal could retain so remarkable a degree of uniformity over such a range as this if its distribution had been due to natural causes. It is equally difficult to believe that local forms did in fact exist on the different islands, but that no clue to their peculiarities should be given by the many jaws, teeth, and leg bones which have been collected. Dispersal by pre-Columbian man suggests itself as the most probable means by which such a distribution could have been effected. While this explanation can not yet be taken as final, it is distinctly pointed to by the facts: (a) that the bones of *Isolobodon* have thus far been found chiefly if not exclusively in kitchen middens, (b) that the abundance of the remains shows that the flesh was an important article of food, and (c) that the pre-Columbian inhabitants of St. Thomas had intercourse with a territory which exactly coincides with the animal's known range.

DASYPROCTA AGUTI (Linnaeus).

An old male of the golden-rumped Brazilian agouti was collected on St. Thomas. It is a perfect specimen (Cat. No. 217950, U.S.N.M.), preserved in alcohol, and of its identification there can be no doubt. As the animal was seen on several occasions running about and evidently wild there is no likelihood that it had been recently imported.² The capture of this specimen is of special interest, as it demonstrates the fact that the Brazilian agouti has been introduced on St. Thomas. The species was recorded as long ago as 1852 by Knox,³ but it has hitherto seemed possible that there was an error

¹ Smiths. Misc. Coll., vol. 66, No. 12, pp. 4-5, December 7, 1916.

² The animal was "wild-killed," although not by me. I had seen this same agouti twice, but had no gun with me, as I was on my way to my own work on those two occasions. Then I went after it for two Sundays with a gun, and of course did not see it. So I finally offered a reward to my workmen for it and one of them got it with a dog. From the reports I received I am sure that there are some more on the island and that these are of the same variety and not the dark-rumped ones. So you can eliminate the theory that this was an escaped pet or was given to me by a well-meaning friend. (de Booy, letter of March 5, 1917.)

³ A historical account of St. Thomas, W. I., p. 221.

of determination, because material from St. Thomas in the British Museum was afterward identified by Alston¹ as *Dasyprocta cristata*. Mr. Oldfield Thomas writes me under date of March 6, 1917, that he has examined the specimens mentioned by Alston and that they are obviously referable to some member of the *cristata* group. There is now little doubt that introductions of agoutis have been made from both Brazil and the Lesser Antilles. That the genus *Dasyprocta* was probably not represented in the Virgin Islands during pre-Columbian times is indicated by the absence from the kitchen middens of bones referable to any of its species.

Measurements of No. 217950: Head and body, 540; tail, 15; hind foot, 125 (110); ear from meatus, 40; ear from crown, 25; condylo-basal length of skull, 101.2; palatal length, 54.6; zygomatic breadth, 59; least interorbital breadth, 32; mastoid breadth, 34.4; occipital depth, 27; least depth of rostrum behind incisors, 24; frontal depth at level of anterior zygomatic root, 29.4; mandible, 64.5; mandibular toothrow (alveoli), 29.

TRICHECHUS MANATUS Linnaeus.

The atlas and axis of one individual, and three fragments of ribs probably not from the same animal as the vertebrae, were dug from the midden on St. Croix.

REPTILES.

CYCLURA MATTEA, new species.

Type.—Left humerus (Cat. No. 59358, U.S.N.M.). Collected in kitchen midden at Magen's Bay, St. Thomas, Virgin Islands, by Theodoor de Booy. Presented by George G. Heye.

Characters.—Humerus resembling that of *Cyclura cornuta* from Santo Domingo and *C. stejnegeri* from Mona Island in general form, but with extremities broader in proportion to total length of the bone, and capitellum broader in proportion to its height. The radial fossa is deeper and better defined than in *C. stejnegeri*. Pelvis much more robust than in *C. cornuta* (that of *C. stejnegeri* not seen).

Measurements.—Humerus (type and Cat. No. 59359, U.S.N.M.): total length 80.3 (76.4); greatest width of proximal extremity, — (30.7); greatest width of distal extremity, 29.5 (—); least width of shaft, 7. (7.5); capitellum, 13.1 by 8.1 (12.3 by 8.0). Pelvis (No. 59734); ilium 6 mm. in front of acetabulum, 14.4 by 7 (10.4 by 5.2)²; ischium at level of small foramen, 13.8 by 5.6 (10.6 by 4.2) pubis at narrowest region, 11.0 by 5.9 (7.3 by 4.0); acetabulum 21.8 by 18.0 (16.2 by 14.0).

¹ Proc. Zool. Soc. London, 1876, p. 348.

² Measurements in parentheses are those of a fully adult *C. cornuta* (No. 28625).

Specimens examined.—Two left humeri and an imperfect left innominate.

Remarks.—So far as can be judged from the structure of the humerus *Cyclura mattea* is much more nearly related to *Cyclura cornuta* and *C. stejnegeri* than it is to the *C. pinguis* of Anegada. Doctor Barbour has kindly had the left humerus removed from the type-specimen of *C. pinguis* and sent to me for comparison. It is here figured on plate 81 (fig. 3). Though from an animal much older than either of the specimens of *C. mattea* (figs. 4, 5), it is by comparison decidedly small: total length, 61.5; greatest breadth of proximal extremity, 23.7; greatest breadth of distal extremity, 21.5; least width of shaft, 7; capitellum, 9.4 by 5.2. It agrees with the humeri of *C. mattea*, *C. cornuta*, and *C. stejnegeri* in the general characters by which the humerus of *Cyclura* differs from that of *Iguana*, principal among which are the great breadth of the extremities as compared with the total length of the bone, and the presence of a well-defined radial fossa. But it is immediately distinguishable by several details of form, notably by the shorter, broader general outline of the expanded portion at each extremity. The length of the sharply defined, ridge-like outer border of the bone in the region of the capitellum and radial fossa is equal to half the width of the distal expansion, while in both *C. mattea*, *C. cornuta*, and *C. stejnegeri* it is conspicuously greater than half this width. As to the peculiarities of *Cyclura mattea* as compared with *C. cornuta* and *C. stejnegeri*: the remains appear to represent a much larger animal; the ratio of greatest width of proximal expansion of humerus to the length of the bone is 40 in *C. mattea* (paratype), 34.4 in *C. stejnegeri* (No. 29366), and 33.4 in *C. cornuta* (No. 28625); the same ratios for the distal expansion are 36.7 (type), 31.9, and 33.4.

The question naturally arises as to whether *Cyclura mattea* may not have been brought to St. Thomas by man, as has undoubtedly been the case with the species of *Iguana* now or recently living on the island. There is, however, no such evidence for artificial introduction as that presented by the rodent *Isolobodon*. The animal is distinct from that of both Mona Island and Santo Domingo; the humerus of the extinct Porto Rican member of the genus is not yet known.¹

CHELONIA MYDAS (Linnaeus).

Shells and limbs of sea turtles of various ages and sizes are represented by about 40 fragments from St. Thomas and two dozen from St. Croix. All the more complete bones appear to be referable to *Chelonia mydas*, though members of other marine genera may be

¹ Barbour, Proc. Biol. Soc. Washington, vol. 30, p. 98, May 23, 1917.

represented among the less characteristic smaller pieces. Of the freshwater *Pseudemys palustris*, whose remains occur freely in the Indian deposits of Cuba and Santo Domingo, there is no trace.

EXPLANATION OF PLATE 81.

Left humerus, natural size.

- FIG. 1. *Iguana rhinolopha*. Cat. No. 35633, U.S.N.M. No history.
2. *Iguana rhinolopha*. Cat. No. 22814, U.S.N.M. No history.
3. *Cyclura pinguis*. Type. Cat. No. 12082, Mus. Comp. Zool. Anegada.
4. *Cyclura mattea*. Type. Cat. No. 59358, U.S.N.M. St. Thomas.
5. *Cyclura mattea*. Paratype. Cat. No. 59359, U.S.N.M. St. Thomas.
6. *Cyclura cornuta*. Cat. No. 28625, U.S.N.M. No history.
7. *Cyclura stejnegeri*. Cat. 29366, U.S.N.M. Mona Island.